

Mid-tube Only

75959

U/R

Page 1

Work Order ID 75959

November-02-11 10:40:48 AM

Item ID: D3391-023

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Mid Tube Assembly

Stop

NS2

Start Date: 02/11/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 16/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: M.L.J

Date: 11/11/02 Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3391	Rev H U/R Q11.11.07

100

100

Skidtubes

Skidtubes

0.00

Skidtubes

Memo

0.00

1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-023

3-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

4-Open saddles and GHW holes to Ø0.375" except for fwd saddle hole of detail "J"

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Deburr

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,

9-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J".

10-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

RT 11-11-15

PJO

W/O: 75953

WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3391-023 PAR #: Fault Category: Dintubes NCR: Yes No DQA: Aut Date: 12/01/03
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: CK Date: 12/01/03

NCR: 11-1091		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11-11-15	100	opened float bag holes to .375" @ wrong sequence R.e training	OP 11-11-15 PS1042	Scrap + replace D2500 - 1 - 100 x (B5025)	RT 11-11-15 11-11-15	 11-11-15 PS1042	OP 11-11-15 PS1042	S 11-11-15 PS1042

NOTE: Date & initial all entries

Work Order ID 75959

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Page 2

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Required Date: 16/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

11-Open .375" holes to .438" ***do not open fwd saddle holes*** *RT 11/11/11*

12-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

13- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drilled .188" dia hole, using t-pins and clicos to ensure perfect alignment, open up previously transferred pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021

14- Transfer drill 2 wearplate holes into D3391-021 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-021.

15- Locating from two fwd wearplate holes drill remaining 6 wearplate holes in D3391-021 using DT8937

16- Open 2 fwd wearplate holes in D3391-023 to .250" dia.

17- counterbore two aft wearplate holes in D3391-021 as per dwg

18- Open 12 wearplate holes in D3391-021 to 0.297" dia.

19-Deburr and blow out all chips from inside tube

open Fwd Saddle Holes in D3391-023
as per dwg D3391 page 2.

N/A DP 11-12-20

DP 11-12-20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Page 3

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Required Date: 16/11/2011 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

110

QC5- Inspect part completeness to step on W/O

0.00

110

QC

Memo

0.00

8/11/20

Quality Control

120

Chemical Conversion Coat per QSI005 4.1

0.00

120

HandFinish

Memo

0.00

Hand Finishing

① CF/SW 11-12-20

130

QC3- Inspect Part Finish

0.00

130

QC

Memo

0.00

Quality Control

2T 11-12-20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Page 4

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Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

140

Skidtubes

Skidtubes

0.00

25 11-12-22

Memo

0.00

Skidtubes

- 1-Open float bag holes as per dwg
- 2-C'sink float bag holes as per dwg
- 3- Prepare tube for welding
- 4-Bond web in place as per Dwg D3391 & QSI 015.

Adhere for 12 hours)
A/R Sikaflex exp: 11/5/08
batch#: 12-08-13

*NOTE: ensure web is inserted in aft end of tube

DP 11-12-22

150

150

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

1 0 8E 11-12-22

Memo

0.00

160

160

Skidtubes

Skidtubes

0.00

1 6 8E 11-12-22

- 1-Weld crossbolt spacer as per dwg D3391 & QSI 004
- 2-grind weld flush

A/R m119712

DP 11-12-22

W/O:		WORK ORDER CHANGES					
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November-02-11 10:40:48 AM

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Page 5

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Setup

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1

Cust Item ID:

Required Date: 16/11/2011 **Req'd Qty:** 1.00

1

Customer:

Reference:

Approvals:	Process Plan: _____	Date: _____	Tooling: _____	Date: _____	Run	Start	*NR1*
	QC: _____	Date: _____	SPC (Y/N): _____	Date: _____	Stop		*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
----------------------------------------	----------------------------------	------------------------------	----------------	---------------	----------------------	-----------------------	-----------------------	--------------------------	------------------------

170 QC10- Inspect visual per QSI004- ground welds

170

QC

Quality Control

0.00

22/11/11

180 QC5- Inspect part completeness to step on W/O

180

QC

Quality Control

0.00

22/11/11

185 Pressure Wash per QSI005 4.3

185

HandFinish

Hand Finishing

0.00

OT/M/11-12-22

Memo

AND REALODINE AS PER PAR09-043

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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November-02-11 10:40:48 AM

75959

Page 6

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1

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Required Date: 16/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

190

Powdercoat

Powder Coating

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

Mid-tube only

XJML 11/12/22

Memo

START TIME:

12:45

0.00

OVEN TEMPERATURE:

320°F

FINISH TIME:

1:15

200

QC3- Inspect Part Finish

0.00

200

QC

Quality Control

Memo

0.00

1-6 4 11/12/22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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November-02-11 10:40:48 AM

75959

Page 7

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1

Cust Item ID:

Required Date: 16/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
	QC:	Date:	SPC (Y/N):	Date:	Stop		*NR2*
210							

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	Skidtubes	0.00							

210

Skidtubes

Memo

0.00

1- insert D3391-021 into D3391-23

2- insert T-pins into first and third fwd saddle holes

3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364

4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos

5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415

6- deburr, re-alodine and blow out chips

7- press fit D3591-1 spacers using DT9416 starting from 0.500" side

220

QC5- Inspect part completeness to step on W/O

0.00

220

QC

Quality Control

Memo

0.00

S 11/2/13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Work Order ID 75959

November-02-11 10:40:48 AM

75959

Page 8

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1

Cust Item ID:

Required Date: 16/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

230

230

HandFinish

Hand Finishing

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Pto =)

0.00

1 6 4 11/12/22

240 QC5- Inspect part completeness to step on W/O

0.00

S 11/12/23

240

240

QC

Quality Control

Memo

0.00

250

250

Packaging

Packaging

Identify as per dwg & Stock Location:

0.00

Memo

0.00

11/12/23

WIO: 75959		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
11/12/23	2.30	INSTAL with: - 4095-045/1377737 (wearplate assembly) - AN3C-JA / M118838 (borts) - NAS144C0332R1 M119736 (washers)	XH X1 XL2 XL	11/12/23	X1 XL2 XL	11/12/23 QA002	Signed

Part No: D3391-023 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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November-02-11 10:40:48 AM

75959

Page 9

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1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

260

260

QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

11/12/23 JF

p111223

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

November-02-11 10:40:53 AM

Page 1

Work Order ID: 75959

75959

Parent Item: D3391-023

D3391-023

Parent Item Name: Mid Tube Assembly

Start Date: 02/11/2011

Required Date: 16/11/2011

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP A05.10.20 New Issue KJ/EC
 IPP B06.02.10ECN773 dwg rev.D EC
 IPP C 07.03.20 rev F dwg EC
 IPP D 07.03.28 re-format EC
 IPP E 07.10.31 ecn 1053P EC
 IPP Rev:F ECN 1056 07-11-13 DD verified by: EC
 IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
 IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
 IPP Rev: I 08-11-13 Removed steps per w/o, QC KJ verified by: ec IPP
 Rev:J add in seq 140 expire date & b# sikaflex DD 10.02.17 verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2500-1-100		Manufactured	No			100	Each	65.0000	1	1			**

D2500-1-100

Skidtube Extrusion

Location	Loc Qty	Loc Code
----------	---------	----------

HALL 65

50251 65

100 Each 0.0000

**

ET 11-11-15

D3391-021

Fwd Tube Assembly

D3389-1

D3389-1

Web

D3681-1

D3681-1

Spacer

Location

HALL

50251

100 Each 0.0000

**

X1

D3391-021

N/A

Manufactured No

D4095

45

11.12.23

Location

HALL

50251

100 Each 0.0000

**

1 77737

B76237

11/12/88

D3389-1

Manufactured No

77031

Location

HALL

77031

140 Each 0.0000

**

1 11-12-21

D3389-1

N/A

Manufactured No

77031

Location

HALL

77031

160 Each 29.0000

**

5 11-12-22

D3681-1

Spacer

Location

LG

68958 29

69893 2

71845 25

B76004 *3

B74874 *2

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Picklist Print

November-02-11 10:40:53 AM

Page 2

Work Order ID: 75959

75959

Parent Item: D3391-023

D3391-023

Parent Item Name: Mid Tube Assembly

Start Date: 02/11/2011

Required Date: 16/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3591-1

D3591-1

Bushing

Manufactured No

210

Each

37.0000

2

2

**

ALS4-1032-130

AI S4-1032-130

Insert

Purchased

No

230

Each

2,279.000

20

20

**

1119530(x20) Mulinuz

Location Loc Qty Loc Code

ST068 37

57350 1

66147 8

71847 28

Location Loc Qty Loc Code

ST280 2000

119084 2000

ST281 279

117717 2

118237 12

118312 2

118386 263

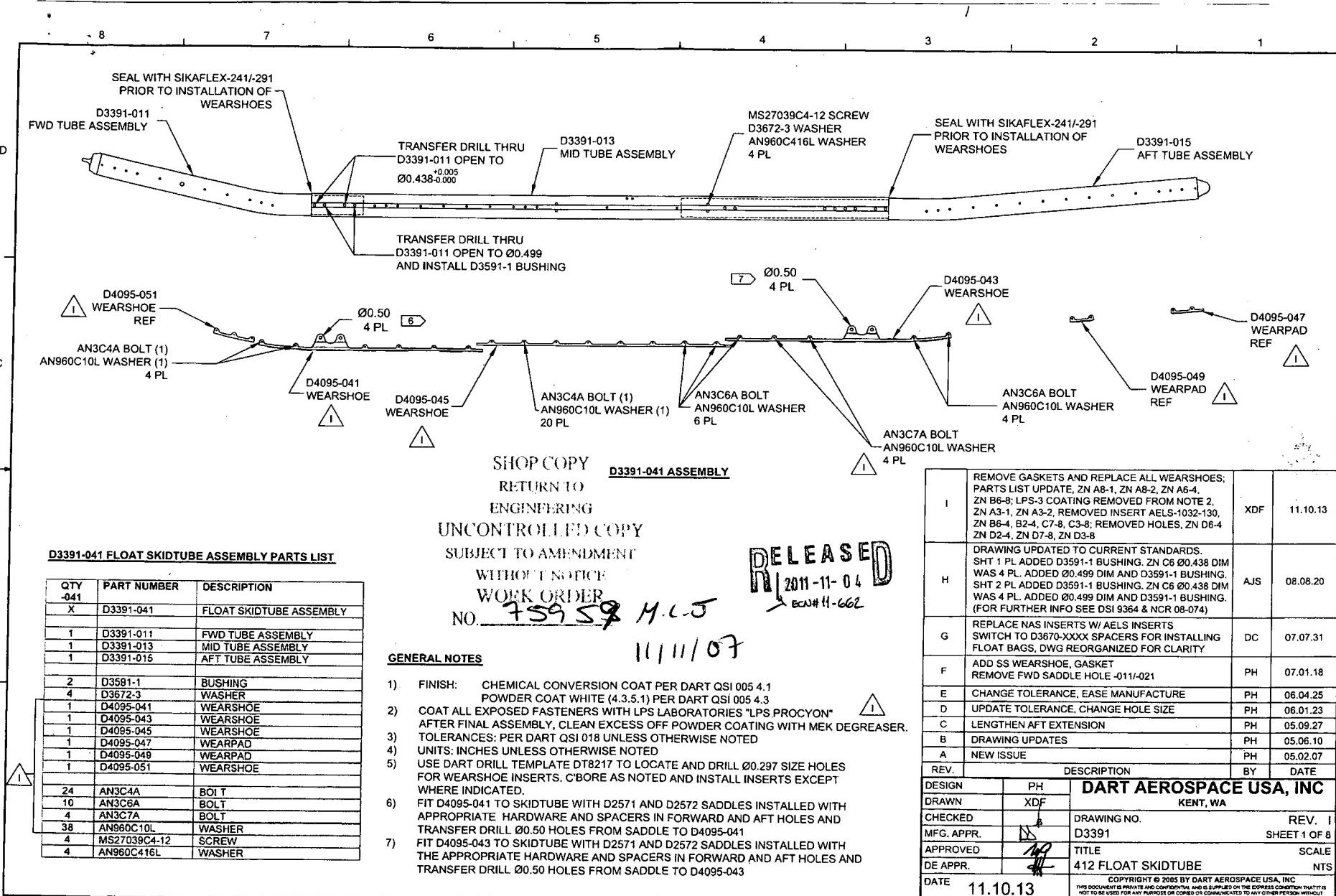
W/O:		WORK ORDER CHANGES					
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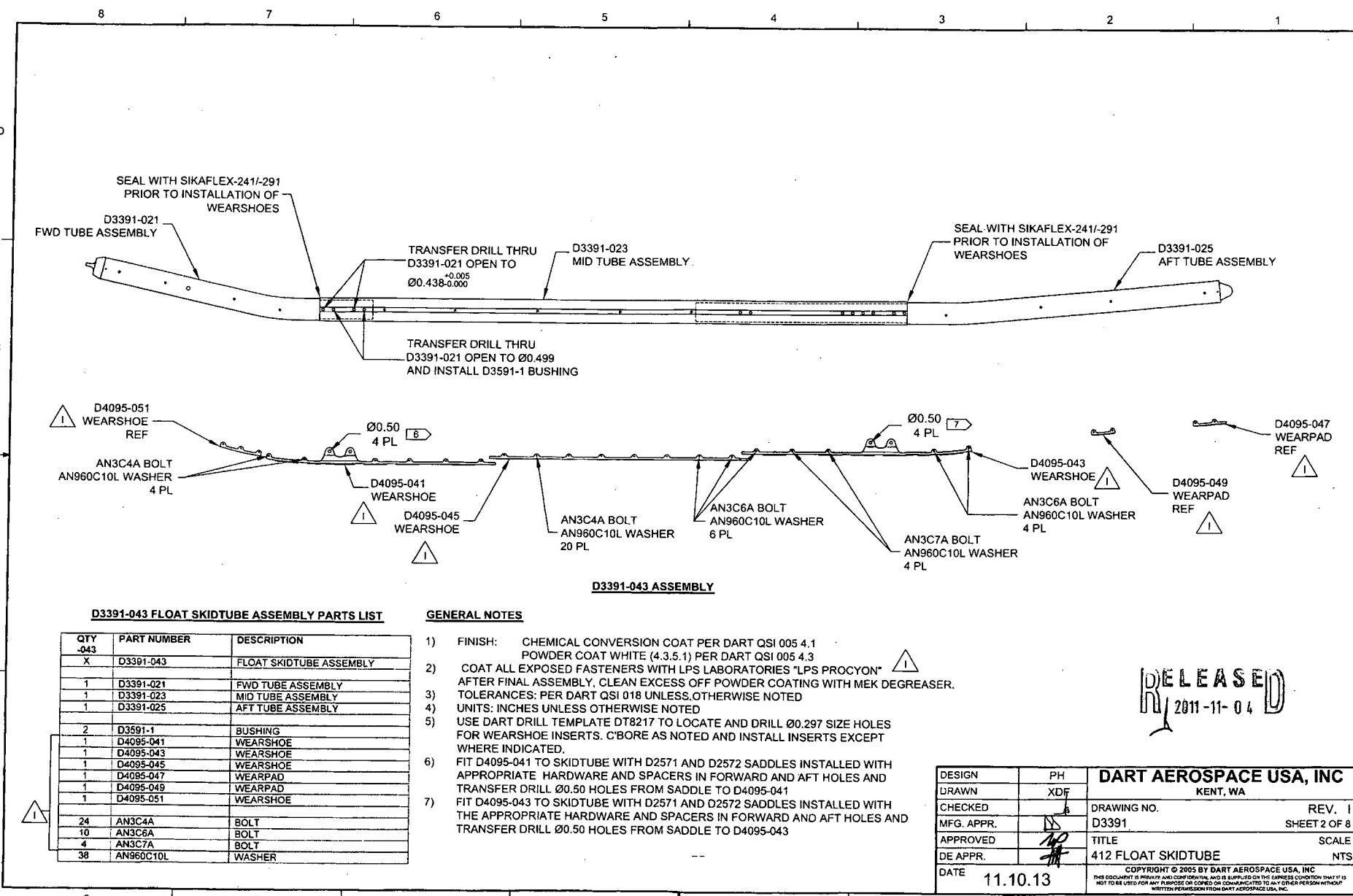
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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75959



Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

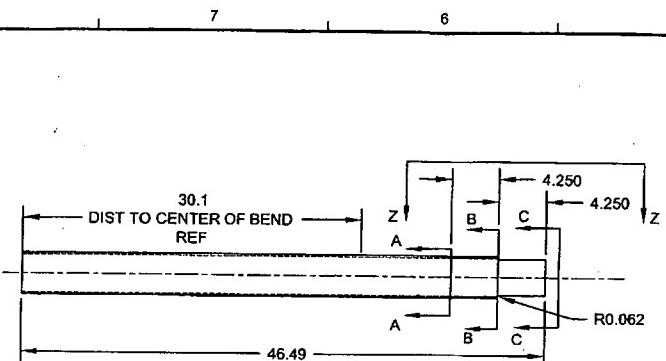
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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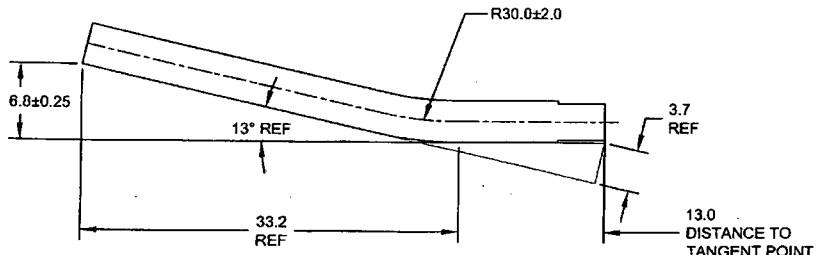
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

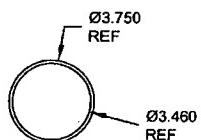
75959



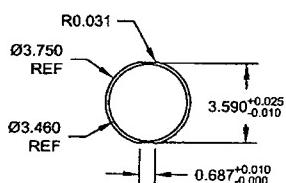
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



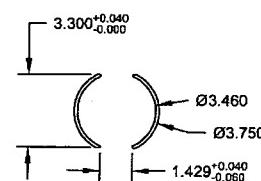
D3391-011-021 BENDING DETAIL
(MAKE FROM D3391-1)



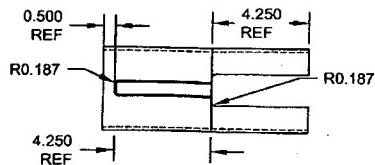
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

RELEASED
2011-11-04

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	XDF	KENT, WA
CHECKED		DRAWING NO.
		D3391
MFG. APPR.		REV. 1
APPROVED		SHEET 3 OF 8
DE APPR.		TITLE
		412 FLOAT SKIDTUBE
DATE	11.10.13	SCALE
		NTS

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

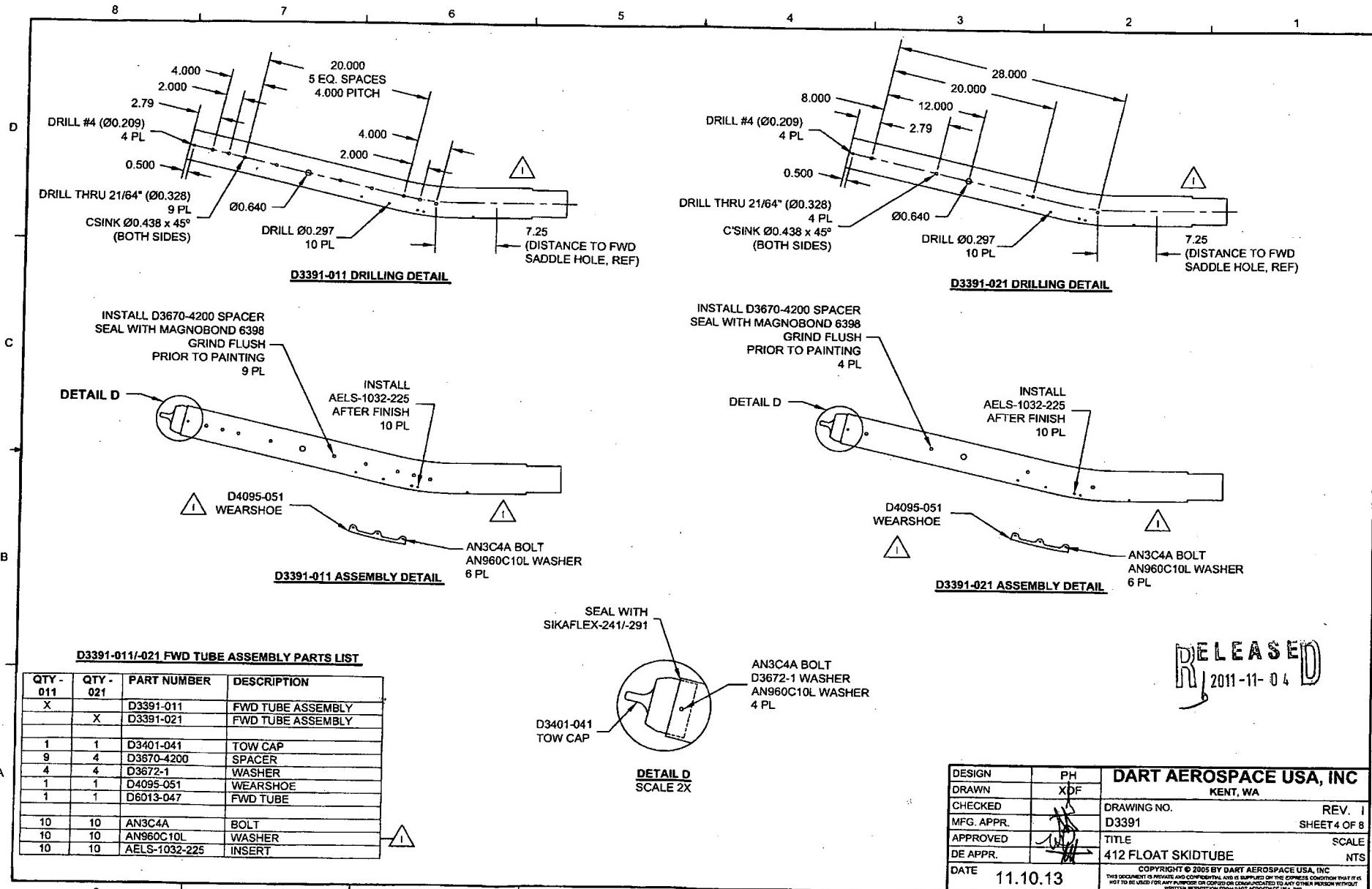
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

75955



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

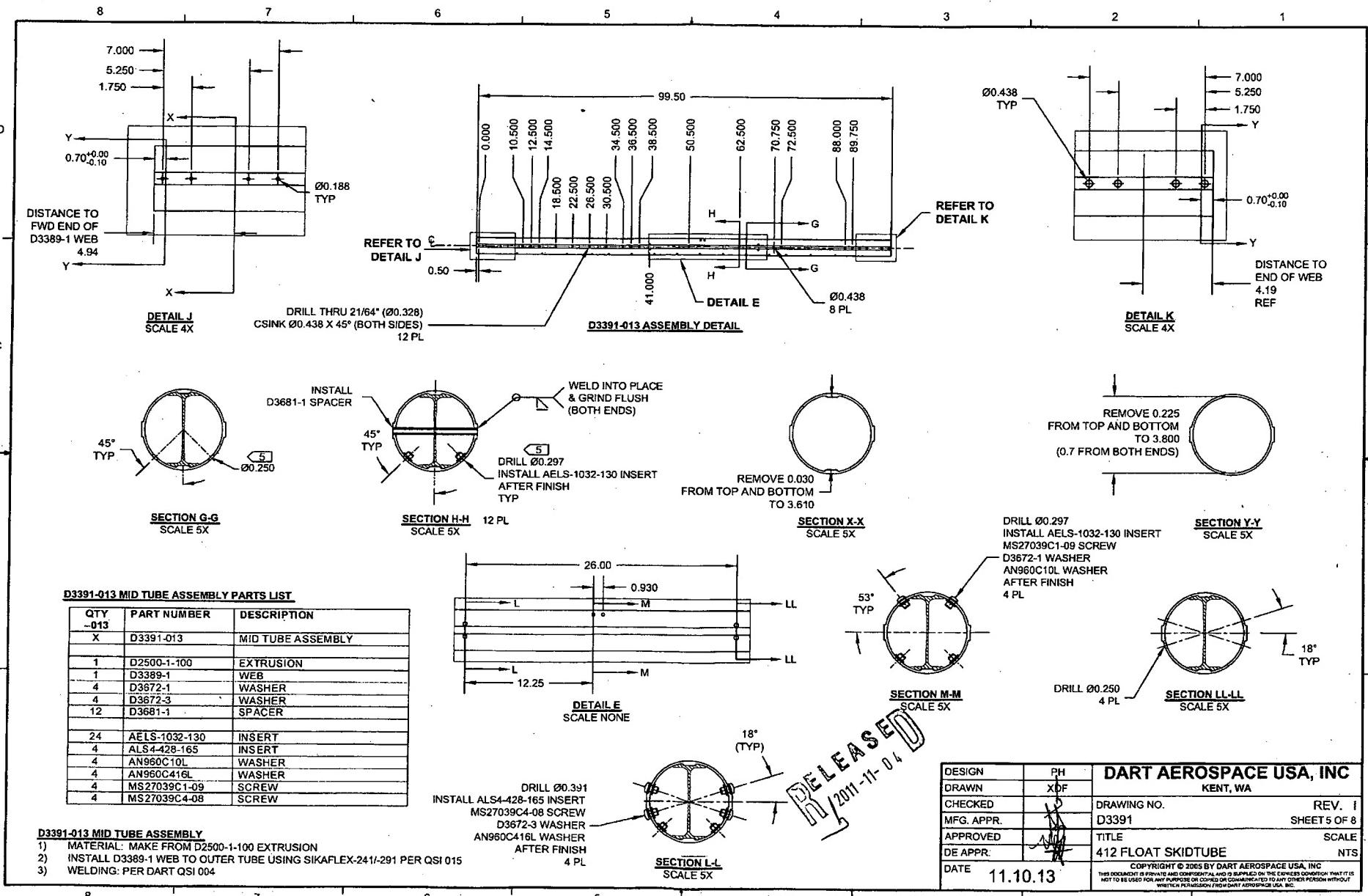
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

75959



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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

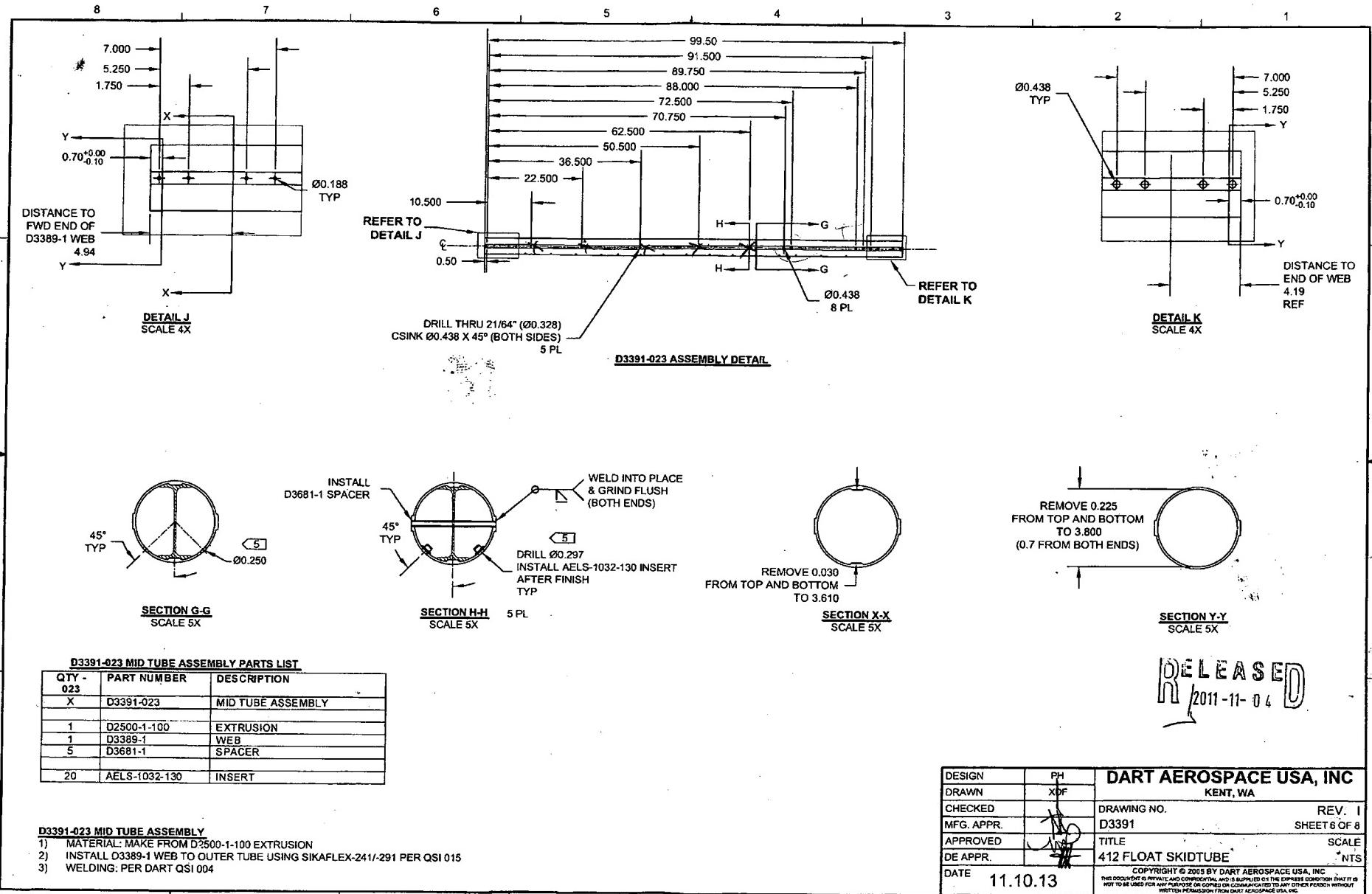
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

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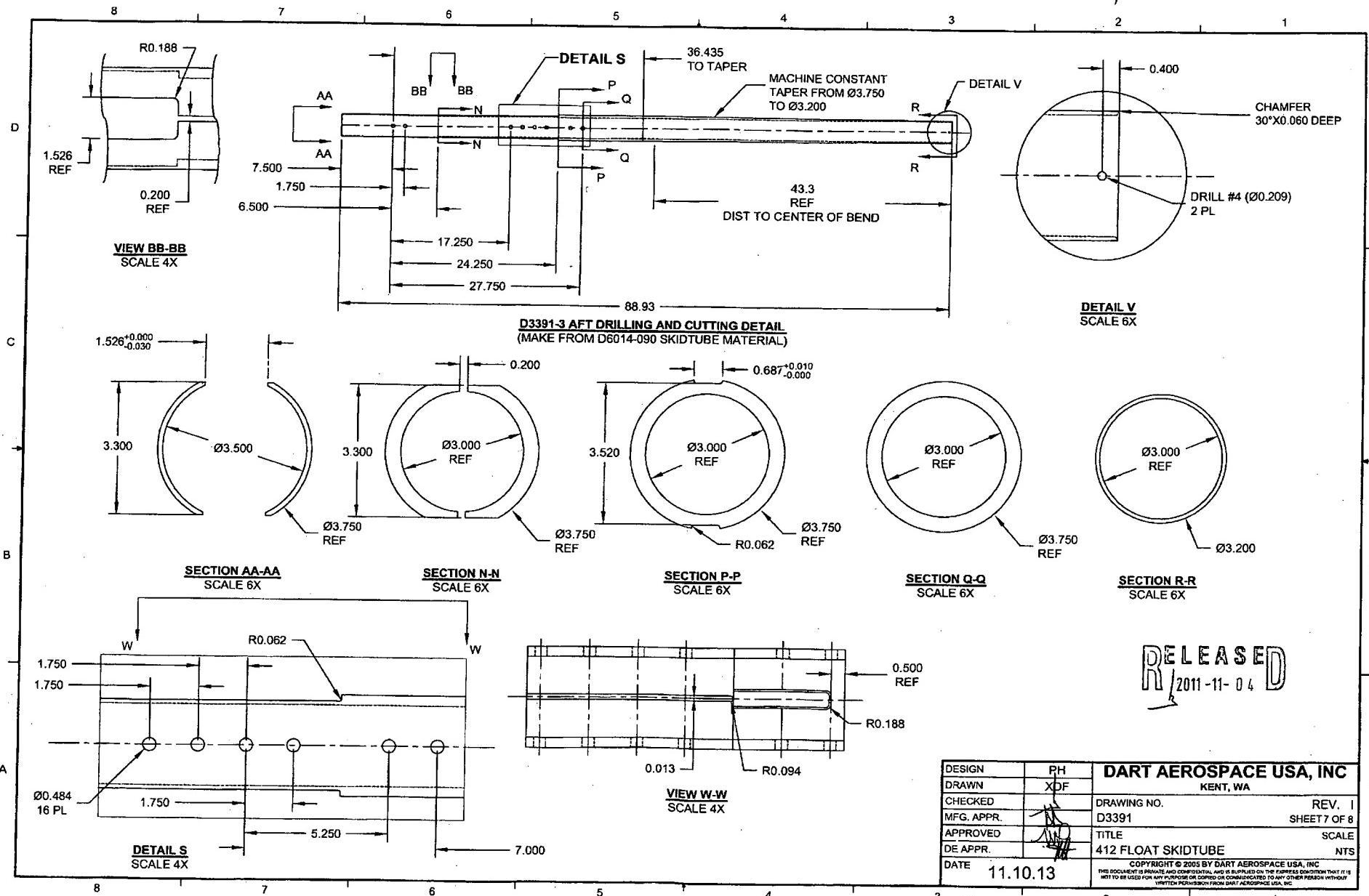
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NOTE: Date & initial all entries

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W/O:		WORK ORDER CHANGES					
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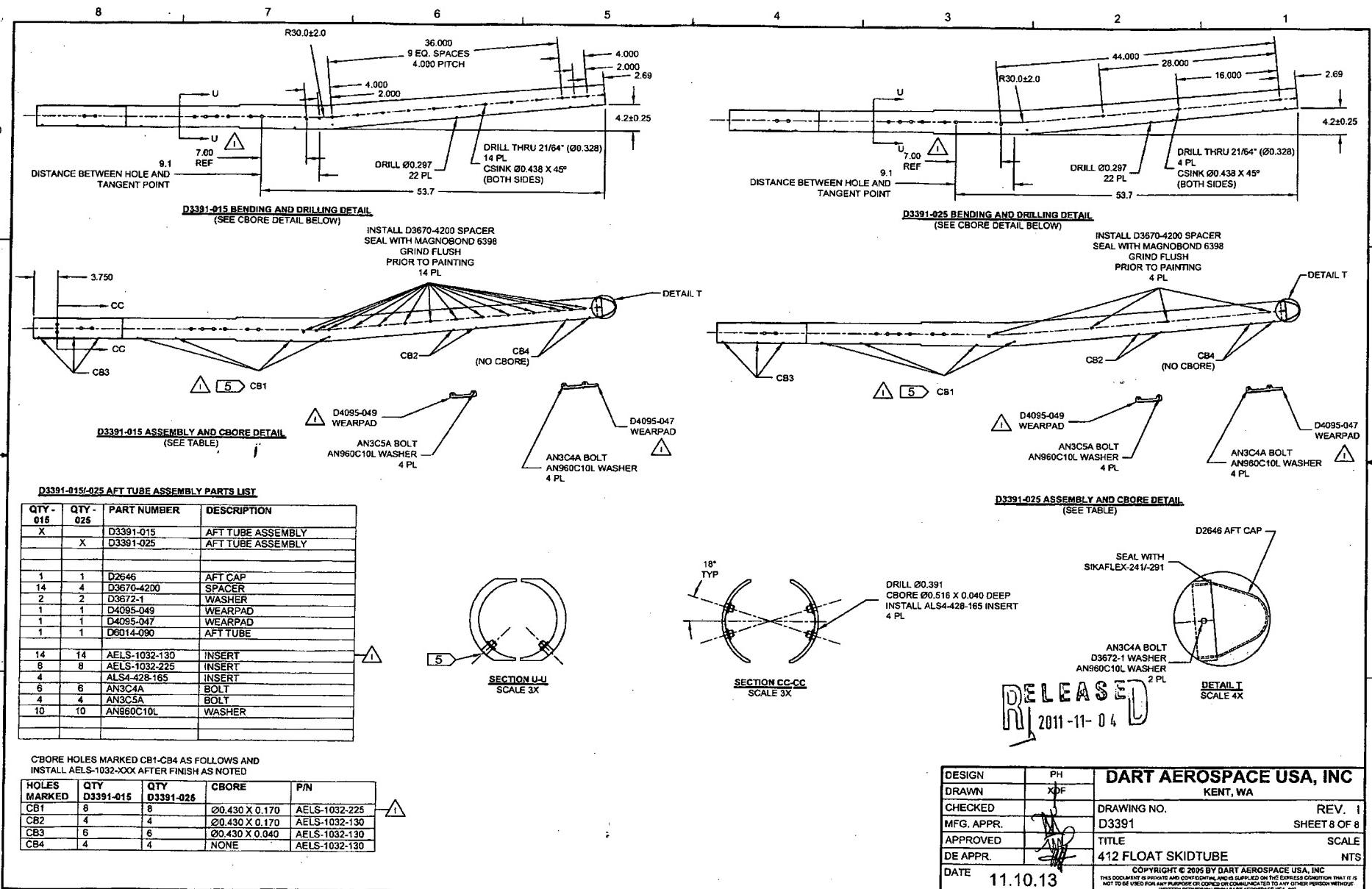
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75959



W/O:

WORK ORDER CHANGES

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 277

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 75959
Part number: D3391 - 023
Description: Skid tub
Welding Process: Tig Mig
Base material: Aluminum
Current: AC DC

TEST REQUIREMENTS AND RESULTS

Visual: pass fail
Penetration: pass fail

UNACCEPTABLE

Cracks: pass fail
Undercut: pass fail
Pin holes: pass fail
Overlap (cold lap) pass fail
Porosity (surface): pass fail
Coloration: pass fail

Qualifier Jeff Allen Date of Test Coupon 11-12-16

Welder Barclay Elliott Date of Test Coupon 11-12-16

The above named individual is qualified in accordance with AWS D17.1.2001 to weld